

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- 1 1.(currently amended) A method for simultaneous detection and/or determination
2 of a plurality of modified proteins in a sample, comprising:
 - 3 a) contacting the sample ~~under mild protein denaturation conditions~~ with a sulfate or
4 sulfonate detergent, in a concentration of about 1-10 mM, at a temperature of between
5 about 4 and about 37 °C, and for a time of from about 2 to about 72 hours with a plurality
6 of first antibodies capable of binding to a specific target protein, the first antibodies being
7 immobilized on solid support material, each first antibody being differentiable from
8 others by a differentiation parameter, whereby the first antibodies bind to respective
9 target proteins present in the sample;
 - 10 b) removing unbound materials from the locus of the first antibodies;
 - 11 c) contacting the materials from step (b) with one or more second antibodies, each of
12 which is specific to a class or subclass of modified proteins or with a plurality of second
13 antibodies, each of which is specific to a modified protein, so as to bind the second
14 antibody or antibodies to modified proteins in the sample; and
 - 15 d) detecting and/or determining a plurality of modified proteins in the sample.
- 1 2.(original) A method according to claim 1, wherein up to 100 modified proteins are
2 detected and/or determined.
- 1 3. (original) A method according to claim 1 wherein the modified proteins are selected
2 from phosphorylated proteins, glycosylated proteins, acetylated proteins, methylated proteins,
3 ubiquitinated proteins, and prenylated proteins.
- 1 4. (original) A method according to claim 3 wherein the modified proteins are
2 phosphorylated proteins.

1 5. (original) A method according to claim 1 wherein the solid support material
2 comprises a series of subsets of solid particles, each subset being distinguishable from other
3 subsets in accordance with a particular property or characteristic.

1 6. (original) A method according to claim 5 in which the solid particles are
2 differentiable by specific color or emission spectra.

1 7. (original) A method according to claim 5 in which the solid particles comprise
2 spherical particles formed from non-porous glass, polystyrene or latex.

1 8. (original) A method according to claim 1 in which the solid support material is a
2 microchip, a plate having a multiplicity of wells, or a slide.

1 9. (original) A method according to claim 1 wherein the materials from step (b) are
2 contacted in step (c) with one or more second antibodies, each of which is specific to a class of
3 modified proteins.

1 10. (original) A method according to claim 9 in which the materials from step (b) are
2 contacted in step (c) with a second antibody that is specific to a class of modified proteins.

1 11. (original) A method according to claim 1 in which the materials from step (b) are
2 contacted in step (c) with a second antibody that is specific to a subclass of modified proteins.

1 12. (original) A method according to claim 1 in which the materials from step (b) are
2 contacted in step (c) with one or more second antibodies specific to phosphorylated proteins.

1 13. (original) A method according to claim 1 in which the materials from step (b) are
2 contacted in step (c) with a plurality of second antibodies, each of which is specific to a modified
3 protein.

1 14. (original) A method according to claim 1 in which the materials from step (b) are
2 contacted in step (c) with a plurality of second antibodies, each of which is specific to a
3 phosphorylated protein.

1 15. (original) A method according to claim 14 in which the proteins are selected from
2 phosphorylated p38MAPK, phosphorylated I κ B α , phosphorylated Erk2, phosphorylated JNK
3 and phosphorylated Akt.

1 16. (original) A method according to claim 1 in which the second antibodies are
2 biotinylated antibodies.

1 17. (original) A method according to claim 1 in which the modified proteins are detected
2 and/or determined in step (d) by contacting the product of step (c) with a labeled moiety.

1 18. (original) A method according to claim 17 in which the labeled moiety comprises a
2 phycobiliprotein.

1 19. (original) A method according to claim 17 in which the labeled moiety comprises a
2 phycoerythrin.

1 20. (original) A method according to claim 17 in which the labeled moiety comprises a
2 conjugate of a labeled moiety with streptavidin.

1 21. (original) A method according to claim 1 in which the sample is a cell lysate.

1 22. (original) A method according to claim 1 in which the sample is contacted with a
2 sulfate or sulfonate detergent in step (a).

1 23. (original) A method according to claim 22 in which the detergent is sodium dodecyl
2 sulfate.

1 24. (withdrawn) A kit for simultaneous detection and/or determination of a plurality
2 of modified proteins in a sample, comprising:

3 (a) a plurality of first antibodies, each capable of binding to a specific target
4 protein, each first antibody being immobilized on a solid support material and each
5 first antibody being differentiable from others by a differentiation parameter;

6 (b) one or more buffers for lysing and for washing cellular material samples to be
7 assayed

8 (c) an assay buffer for conducting the assay, said buffer containing from about 1-10
9 mM of a sulfate or sulfonate detergent; and

10 (d) one or more second antibodies specific to classes or subclasses of modified
11 proteins or to specific individual modified proteins.

1 25. (withdrawn) A kit according to claim 24 wherein the solid support material
2 comprises a series of subsets of solid particles, each subset being distinguishable from other
3 subsets in accordance with a particular property or characteristic.

1 26. (withdrawn) A kit according to claim 25 in which the solid particles are
2 differentiable by specific color or emission spectra.

1 27. (withdrawn) A kit according to claim 25 in which the solid particles comprise
2 spherical particles formed from non-porous glass, polystyrene or latex.

1 28. (withdrawn) A kit according to claim 24 in which the solid support material is a
2 microchip, a plate having a multiplicity of wells, or a slide.

1 29. (withdrawn) A kit according to claim 24 wherein the modified proteins are
2 selected from phosphorylated proteins, glycosylated proteins, acetylated proteins, methylated
3 proteins, ubiquitinated proteins, and prenylated proteins.

1 30. (withdrawn) A kit according to claim 24 wherein the modified proteins are
2 phosphorylated proteins.

1 31. (withdrawn) A kit according to claim 24 wherein the second antibodies
2 comprise one or more antibodies that are specific to classes of modified proteins.

1 32. (withdrawn) A kit according to claim 24 wherein the second antibodies
2 comprise one or more antibodies that are specific to subclasses of modified proteins.

1 33. (withdrawn) A kit according to claim 24 wherein the second antibodies are
2 specific to phosphorylated proteins.

1 34. (withdrawn) A kit according to claim 24 wherein the second antibodies
2 comprise a plurality of antibodies, each of which is specific to an individual modified protein.

1 35. (withdrawn) A kit according to claim 24 further comprising a labeled moiety.

1 36. (withdrawn) In a process for simultaneously analyzing a sample for a plurality
2 of modified proteins, the step of denaturing modified proteins comprising contacting the sample
3 with a sulfate or sulfonate detergent, preferably in a concentration of about 1-10 mM, at a
4 temperature of between about 4 and about 37 °C, and for a time of from about 2 to about 72
5 hours

1 37. (withdrawn) A process according to claim 36 in which the detergent is sodium
2 dodecyl sulfate..